CLAIMS

1. A virtual assistant system for facilitating semiconductor tool maintenance, the virtual assistant system comprising:

a first interface for receiving a tool alarm from a specified semiconductor tool;

a database including a first table for providing information as to what can and cannot be done to the specified semiconductor tool;

a first processing subsystem including instructions for deducting tool alarm information from the tool alarm; and

a second processing subsystem including instructions for receiving the tool alarm information, perusing the database, and identifying one or more causes associated with the tool alarm information.

2. The virtual assistant system of claim 1 wherein the database further includes a second table for providing routine maintenance information for the specified semiconductor tool.

3. The virtual assistant system of claim 2 wherein the database further includes a third table for providing a predetermined operating procedure for maintaining the specified semiconductor tool.

4. The virtual assistant system of claim 3 wherein the database further includes a fourth table for providing a list of high risk actions for the specified semiconductor tool.

5. The virtual assistant system of claim 1 wherein the second processing subsystem also includes instructions for identifying one or more actions to be performed on the specified semiconductor tool.

6. The virtual assistant system of claim 5 wherein:

the database further includes a second table for providing routine maintenance information for the specified semiconductor tool and a third table for providing a predetermined operating procedure for maintaining the specified semiconductor tool; and

the second processing subsystem also includes instructions for identifying maintenance actions to be performed on the specified semiconductor tool.

7. The virtual assistant system of claim 5 further comprising:

a second interface for sending the identified cause and action information to a mobile terminal.

8. The virtual assistant system of claim 1 further comprising:

a second interface for receiving input from external entities, the input including pre-collected knowledge about the semiconductor tool; and

wherein the first processor subsystem also includes instructions for updating the database from the received input.

9. A method for providing information to repair a semiconductor tool, the method comprising:

receiving a tool alarm when a tool problem occurs;

upon receipt of the tool alarm, providing tool alarm information to a database to determine a problem, cause, and action;

checking if the tool alarm information matches an item in a standard operation procedures (SOP) table of the database;

if the tool alarm information matches an item in the SOP table, providing SOP information to a tool alarm message;

sending the tool alarm message to a remote terminal for use in repairing the semiconductor tool.

10. The method of claim 9 further comprising:

checking if the tool alarm information matches an item in an allowances and restrictions table of the database;

if the tool alarm information matches an item in the allowances and restrictions table, providing allowances and restrictions information to the message.

11. The method of claim 9 further comprising:

checking if the tool alarm information matches an item in an requirements table of the database;

if the tool alarm information matches an item in the requirements table, providing requirements information to the message.

12. The method of claim 9 further comprising:

determining a problem, cause, and action associated with the tool alarm information by searching one or more problem trees, cause trees and action trees in the database;

providing problem, cause, and action information to the message.

13. The method of claim 9 further comprising:

updating the database with experiential knowledge provided from a plurality of different entities working on the semiconductor tool.

14. The method of claim 9 wherein the step of updating the database with experiential knowledge is performed on a daily basis.

15. The method of claim 9 further comprising:

updating the database with manufacture knowledge provided from one or more manufacture or repair facilities associated with the semiconductor tool.

16. The method of claim 9 wherein the step of updating the database with manufacture knowledge is performed on a repetitive basis.

17. An assistant system for use in maintaining a semiconductor tool, the assistant system comprising:

a first interface for receiving tool alarms from a plurality of different semiconductor tools connected via servos;

a database including a plurality of problem trees, a plurality of cause trees, and a plurality of action trees; and

a processing subsystem for analyzing the tool alarms by comparing them to the problem trees and providing a cause and action message based on the analysis.

18. The system of claim 17 wherein the problem trees include at least one group for software problems and another group for temperature-related problems.

19. The system of claim 18 wherein the group for software problems includes a subgroup for automatic control system problems.

20. The system of claim 18 wherein the group for temperature-related problems includes a subgroup for valve problems.

21. The system of claim 20 wherein the subgroup for temperature-related problems includes a further subgroup for user-defined problems.

22. The system of claim 20 wherein the subgroup for software problems includes a further subgroup for statistical process control problems.

23. The system of claim 21 wherein the subgroup for temperature-related problems is linked to at least one of the plurality of cause trees.

24. The system of claim 23 wherein the at least one of the plurality of cause trees includes a subgroup related to valve obstructions.

25. The system of claim 24 wherein the subgroup for valve obstructions is linked to at least one of the plurality of action trees.

26. The system of claim 25 wherein the at least one of the plurality of action trees includes a subgroup related to routine valve maintenance actions.

27. The system of claim 25 wherein the at least one of the plurality of action trees includes a subgroup related to recently added valve maintenance actions.

28. The system of claim 27 further comprising:

a second interface for receiving a plurality of valve maintenance actions from a maintenance entity that previously worked on the semiconductor tool, including the recently added valve maintenance actions.